IN THE CLAIMS

1. (Currently Amended) A method for ~~fast and accurate~~ writing ~~of very complex~~ patterns on a light sensitive surface comprising the steps of:

providing at least two modulated focused laser beams scanning the surface in interlaced parallel scan lines;

providing for each beam a beam processor unit with data conversion logic and means for modulating said laser beam;

providing input data containing [[the]] geometries to be written on [[the]] a plate in an input format;

in a first conversion step fracturing the input data into writing fields;

in a second conversion step cutting the geometries in the fractured database into scan lines, and generating for each scan line a scan list containing geometries to be written in the scan line, so called segments, and ~~per forming~~ performing said second conversion step in at least two of the beam processor units, so called segmentizers, operating simultaneously but on different writing fields;

further distributing said scan lists to the beam processor units in accordance with the interlacing of the scan lines; and

in a third conversion step converting in said beam processor units said scan lists of segments to analog power modulation sequences for said laser beams.

2. (Previously Presented) A method as in claim 1 where in the segments in the scan lists are simplified geometrical representations of those parts of the input geometries that fall in the scan line.

3. (Previously Presented) A method as in claim 1 where in the segments in a scan lists are non-overlapping.

4. (Previously Presented) A method as in claim 1 where in the segments in a scan lists are rectangles with a length and a width.

5. (Previously Presented) A method as in claim 1 where in the segments in the scan lists are sorted in the order they will be written by the scanning beam.

6. (Previously Presented) A method as in claim 1 where in the conversion in the beam processor units uses a set of conversion rules that are empirically calibrated.

7. (Previously Presented) A method as in claim 1 where in the conversion in the beam processor units uses at least one table-lookup function.

8. (Previously Presented) A method as in claim 1 where in the scan lists are distributed to the beam processor units via a cross-switch network.

9. (Previously Presented) A method as in claim 1 where in the scan lists are distributed to the beam processor units via a bus-system.

10. (Previously Presented) A method as in claim 1 where in the scan lists are distributed to the any one of the preceding claims beam processor units by a multiplexer.

11. (Previously Presented) A method as in claim 1 where in the data are pipelined through the second and third conversion steps without intermediate non-volatile storage.

12. (Previously Presented) A method as in claim 1 where in beam boards has an input buffer with room for the scan lists for at least two writing fields.

13. (Previously Presented) A method as in claim 1 where the transfer between the segmentizers and the beam processor unit are double buffered, in one output buffer in the segmentizer and in one input buffer in the beam processor unit.

14. (Currently Amended) An apparatus for ~~fast and accurate~~ writing of ~~very complex~~ patterns on a light sensitive surface comprising:

at least two modulated focused laser beams scanning the surface in interlaced parallel scan lines;

for each laser beam a beam processor unit with data conversion logic and means for modulating said laser beam;

means for accepting input data containing [[the]] geometries to be written on [[the]] a plate in an input format;

data processing means for in a first conversion step fracturing the input data into writing fields;

parallel data processing means in the beam processor units for in a second conversion step cutting the geometries in [[the]] a fractured database into scan lines,

and generating for each scan line a scan list containing geometries to be written in the scan line, so called segments;

data distribution means for distributing said scan lists to the beam processor units in accordance with the interlacing of the scan lines; and

data conversion and beam modulation means in the beam processors units for, in a third conversion step, converting said scan lists of segments to analog power modulation sequences on said laser beams.

15. (New) A method for writing of patterns on a light sensitive surface comprising:

providing at least two modulated focused laser beams scanning the surface in interlaced parallel scan lines;

providing for each beam a beam processor unit with data conversion logic and adapted to modulate the laser beam;

providing input data containing geometries to be written on a workpiece;

fracturing the input data into writing fields via a first conversion;

cutting the geometries in a fractured database into scan lines, and generating, for each scan line, a scan list containing geometries to be written in the scan line, via a second conversion, which is performed in at least two segmentizers, operating simultaneously but on different writing fields;

distributing the scan lists to the beam processor units in based on the interlacing of the scan lines; and

converting, in the beam processor units, the scan lists of segments into analog power modulation sequences for the laser beams, via a third conversion.

16. (New) The method of claim 15, wherein segments in the scan lists are sorted in the order in which the segments will be written by the scanning beam.

17. (New) The method of claim 15, wherein the data are pipelined through the second and third conversion steps without intermediate non-volatile storage.

18. (New) The method of claim 15, wherein the transfer between the segmentizers and the beam processor unit is double buffered, one output buffer being located in the segmentizer and one input buffer being located in the beam processor unit.

19. (New) An apparatus for writing of patterns on a light sensitive surface comprising:

at least two modulated focused laser beams scanning the surface in interlaced parallel scan lines;

for each laser beam an individual beam processor unit with data conversion logic and a modulator adapted to modulate the laser beam;

a processor adapted to accept input data containing geometries to be written on a workpiece, and adapted to fracture the input data into writing fields;

a segmentizer adapted to cut the geometries in a fractured database into scan lines, and adapted to generate, for each scan line, a scan list containing geometries to be written in the scan line; and

a resolver adapted to distribute the scan lists to each of the individual beam processor units based on the interlacing of the scan lines; wherein

the individual beam processors units are adapted to convert the scan lists into analog power modulation sequences on the laser beams.